

RESPONSE TO OFFICE ACTION  
DATED AUGUST 10, 2004

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Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1 (currently amended). A supported lattice for cultivating living cells to form living tissue, said supported lattice comprising:

a support substrate comprising a plurality of resilient filamentary members interlaced together, said resilient filamentary members being interlaced to form a relatively coarse mesh defined by relatively large interstices between ~~said resilient filamentary members~~ that are large compared with said living cells such that said cells do not bridge said interstices; and

a cell cultivation lattice comprising a plurality of flexible filamentary members interlaced with one another and said resilient filamentary members, said flexible filamentary members being interlaced to form a relatively fine mesh defined by relatively small interstices between ~~said flexible filamentary members~~ and adapted for growing cells in a two-dimensional array across said large interstices of said support substrate to form a substantially continuous surface comprising said living tissue.

2 (previously presented). A supported lattice according to Claim 1, wherein said support substrate comprises an elongated tube.

3 (previously presented). A supported lattice according to Claim 2, wherein said resilient and said flexible filamentary members are interlaced by braiding.

4 (currently amended). A supported lattice according to Claim 2, wherein said relatively small interstices between

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said flexible filamentary members have an average size between about 60 microns and about 80 microns.

5 (previously presented). A supported lattice according to Claim 2, wherein said resilient filamentary members comprise monofilaments selected from the group consisting of stainless steel, nitinol and elgiloy monofilaments.

6 (previously presented). A supported lattice according to Claim 5, wherein said flexible filamentary members comprise multi-filament yarns.

7 (previously presented). A supported lattice according to Claim 6, wherein said multi-filament yarns are elastic.

8 (previously presented). A supported lattice according to Claim 7, wherein said multi-filament yarns comprise textured yarns.

9 (previously presented). A supported lattice according to Claim 8, wherein said multi-filament yarns are selected from the group consisting of polyester, polytetrafluoroethylene, polypropylene and polyethylene.

10 (currently amended). A supported lattice according to Claim 2, further comprising a second elongated tube positioned coaxially within said first named elongated tube, said second elongated tube comprising:

a second support substrate comprising a plurality of second resilient filamentary members interlaced together, said second resilient filamentary members being interlaced to form a relatively coarse mesh defined by relatively large interstices between said second resilient filamentary members that are large compared with said living cells such that said cells do not bridge said interstices; and

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a second cell cultivation lattice comprising a plurality of second flexible filamentary members interlaced with one another and said second resilient filamentary members, said second flexible filamentary members being interlaced to form a relatively fine mesh defined by relatively small interstices between said second flexible filamentary members and adapted for growing cells in a two-dimensional array across said large interstices of said second support substrate to form a second substantially continuous surface comprising said living tissue.

11 (currently amended). A supported lattice according to Claim 10, wherein said interstices of said first named elongated tube cell cultivation lattice have an average size between about 120 microns and about 150 microns and said interstices of said second elongated tube cell cultivation lattice have an average size between about 60 microns and about 80 microns.

12 (previously presented). A supported lattice according to Claim 10, further comprising a plurality of elongated filamentary bonding members interlaced with said resilient filamentary members comprising one of said elongated tubes, said filamentary bonding members having a relatively low melting point and being heat fused to said resilient filamentary members comprising said tubes, thereby joining said tubes to one another.

Claim 13 (canceled).

14 (currently amended). A supported lattice according to Claim 13 15, wherein filaments comprising said multi-filament yarns assume said buckled configuration independently of one another thereby forming relatively small interstices between said filaments.

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15 (currently amended). A supported lattice according to Claim 14 3, wherein said resilient filamentary members comprise a heat shrinkable material having a relatively low melting point and said flexible filamentary members comprise multi-filament yarns of a dimensionally stable material having a relatively higher melting point, said multi-filament yarns being in a buckled configuration inwardly and outwardly from said support substrate thereby forming dimples in said lattice, said dimples being located within said relatively large interstices between said resilient filamentary members, said resilient filamentary members being heat fused to one another and to said flexible filamentary members at points of mutual contact, thereby locking said flexible filamentary members in said buckled configuration.

16 (previously presented). A supported lattice according to Claim 15, wherein said resilient filamentary members comprise polypropylene and said flexible filamentary members comprise polytetrafluoroethylene.

17 (previously presented). A supported lattice according to Claim 2, wherein said resilient and said flexible filamentary members comprise bio-absorbable material selected from the group consisting of polylactic acid, polyglycolic acid and hydroxyacetic acid, said resilient filamentary members having a relatively larger denier than said flexible filamentary members.

18 (previously presented). A supported lattice according to Claim 1, wherein said resilient filamentary members comprise monofilaments selected from the group consisting of stainless steel, nitinol and elgiloy monofilaments.

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19 (previously presented). A supported lattice according to Claim 18, wherein said flexible filamentary members comprise multi-filament yarns.

20 (withdrawn). A method of making a supported lattice adapted for growing cells in a two-dimensional array to form a substantially continuous surface comprising living tissue, said method comprising the steps of:

braiding a plurality of resilient filamentary members into a tubular support substrate comprising a relatively coarse mesh defined by relatively large interstices between said resilient filamentary members, said resilient filamentary members comprising a heat-shrinkable material;

braiding a plurality of relatively flexible filamentary members with one another and with said resilient filamentary members to form a lattice supported on said support substrate and comprising a relatively fine mesh defined by relatively small interstices between said resilient filamentary members, said flexible filamentary members comprising a dimensionally stable material having a higher melting temperature than said heat-shrinkable material;

compressing said tubular support substrate longitudinally causing said flexible filamentary members to buckle and form dimples located within said interstices of said support substrate; and

heating said filamentary members above the melting temperature of said heat-shrink material thereby shrinking said resilient filamentary members and fusing them together with said flexible filamentary members at mutual points of contact.

21 (withdrawn). A method according to Claim 20, wherein said filamentary members are braided over a mandrel.

Claims 22 and 23 (canceled).